



# UNITED STATES PATENT AND TRADEMARK OFFICE

A

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,681	09/27/2001	Ray M. Richardson	INTL-0607-US (P11748)	2831

7590

10/12/2005

Timothy N. Trop  
TROP, PRUNER & HU, P.C.  
SUITE 100  
8554 KATY FWY.  
HOUSTON, TX 77024-1805

EXAMINER

SORRELL, ERON J

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/964,681

Applicant(s)

RICHARDSON, RAY M.

Examiner

Eron J. Sorrell

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 9-16, 19-26 and 29-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-16, 19-26 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 2182

### DETAILED ACTION

#### *Claim Rejections - 35 USC § 101*

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

2. Referring to claim 11, the preamble of the claim should include a positive recitation that the medium is "computer-readable" and stores instructions that "when executed" cause the processor-based system to perform the claimed functionality.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the

Art Unit: 2182

United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 11, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Dixon et al. (U.S. Patent No. 6,751,732 hereinafter "Dixon").

5. Referring to method claim 1, and article claim 11, Dixon teaches a method comprising:

initiating a direct memory access (see lines 17-37 of column 10); and

successively transferring data from linked buffers in a first processor system directly to linked buffers in a second processor system (see figure 9 and <sup>lines</sup> ~~lines~~ 17-37 of column 10, note the buffers are linked buffers because they're implemented as a circular data structure with a head and tail).

6. Referring to system claim 21, Dixon teaches a system comprising:

a processor (see paragraph bridging columns 7 and 8); and  
a storage coupled to the processor to store instructions that enable the processor to:

initiating a direct memory access (see lines 17-37 of column 10); and

Art Unit: 2182

successively transferring data from linked buffers in a first processor system directly to linked buffers in a second processor system (see figure 9 and lines 17-37 of column 10, note the buffers are linked buffers because they're implemented as a circular data structure with a head and tail).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2,3,12,13,22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon et al. (U.S. Patent No. 6,754,732 hereinafter "Dixon") in view of *C++ How to Program* by Deitel and Deitel hereinafter "Deitel").

9. Referring to method claim 2, article claim 12, and system claim 22, Dixon fails to explicitly set forth the limitations that the linked buffers are arranged in a linked list, however Dixon does teach the buffers being circular and teaches that

Art Unit: 2182

methods for implementing circular buffers are well known in the art (see lines 16-45 of column 4).

Deitel teaches circular buffers implemented as linked lists (see paragraphs 3-5 of page 810).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the method and system of Dixon with the above teachings Deitel such that the circular buffers are linked. One of ordinary skill in the art would have been motivated to make such modification because use of linked lists allow dynamic implantation of circular buffers that may grow or shrink according to the needs of the system.

10. Referring to method claim 3, article claim 13, and system claim 23, Dixon teaches providing descriptors that indicate the status of each of said buffer (see lines 38-63 of column 10).

11. Claims 4,14, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon in view of Deitel as applied to claim 1, above and further in view of Dixon et al. (U.S. Patent No. 5,568,443 hereinafter "Dixon '443").

Art Unit: 2182

12. Referring to method claim 4, article claim 14, and system claim 24, the combination of Dixon and Deitel fails to teach providing flags that indicate when a buffer is full or empty.

Dixon '443 teaches, in an analogous system, the above limitations (see lines 31-35 of column 3 and lines 33-39 of column 4).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the combination of Dixon and Deitel with the above teachings from Dixon '443). One of ordinary skill in the art would have been motivated to make such modification in order to prevent overrun or under-run errors from occurring in the system.

13. Claims 5,6,9,10,15,16,19,20,25,26,29,30,32,34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon in view of Mecklai et al. (U.S. Patent No. 6,412,029).

14. Referring to method claims 5,6, and 32, article claims 15,16, and 34, and system claims 25,26, and 36, Dixon fails to teach transferring data between buffers in a cellular telephone, wherein the first processing system includes a baseband processor and the second processor system includes a multimedia processor of the cellular phone, wherein the transferring

Art Unit: 2182

comprises successively transferring the data directly from the first processor system to the second processor system via an internal bus of the wireless system.

Mecklai teaches, in an analogous system, the above limitation (see figure 2 and paragraph bridging columns 2 and 3).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of Dixon and Mecklai. One of ordinary skill in the art would have been motivated to make such combination to utilize the enhanced DMA features of Dixon within the cellular telephone.

15. Referring to method claim 9 and 10, article claims 19 and 20, and system claims 29 and 30, Dixon fails to teach generating an interrupt when one of the linked buffers is empty and data is to be transferred from the one of the linked buffers, intercepting the interrupt, and automatically filling the one of the linked buffers and determining whether one of the linked buffers that is to receive data is full and if the one of the linked buffers is full, automatically generating an interrupt, intercepting the interrupt, and automatically emptying the one of the linked buffers.



Art Unit: 2182

Mecklai teaches, in an analogous system, generating an interrupt when one of the buffers is empty and data is to be transferred from the one of the buffers, intercepting the interrupt, and automatically filling the one of the buffers (see lines 11-40 of column 5), as well as determining whether one of the buffers that is to receive data is full and if the one of the buffers is full, automatically generating an interrupt, intercepting the interrupt, and automatically emptying the one of the buffers (see line 54 of column 4 to line 10 of column 5).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system of Dixon with the above teachings of Mecklai. One of ordinary skill in the art would have been motivated to make such modification in to prevent overrun or under-run errors while transferring data in system.

16. Claims 31,33, and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon in view of "Developing Software in Assembly Language - First In First Out Queue" by Valvano, Jonathan (hereinafter "Valvano").

17. Referring to claims 31,33, and 35, Dixon fails to explicitly set forth the limitations of transferring the data

Art Unit: 2182

via a first-in first-out (FIFO) buffer in the first processing system directly to a FIFO buffer in the second processor system.

Valvano teaches FIFO buffers are useful for data flow problem and is a very common data structure used of I/O interfacing (see first full paragraph on page 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the method and system of Dixon with the above teachings of Valvano in order to manage any data flow problems as suggested by Valvano.

#### ***Response to Arguments***

18. Applicant's arguments with respect to claims 1, 11, and 21 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this

Art Unit: 2182

action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J. Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on 571-272-4083. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2182

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJS  
October 3, 2005



**KIM HUYNH**  
**PRIMARY EXAMINER**

10/7/05